ICE Response to CME's Analysis of and Request to CFTC to Eliminate the Conditional Limit

Background:

Since February 2010, the CFTC has provided for a "Conditional Limit" for financially settled natural gas contracts during the last three days of contract trading. Under the Conditional Limit, a market participant may carry a position in the financially-settled natural gas contracts (ICE H or NYMEX NN) that is up to 5 times that of the physically settled natural gas contract's (NYMEX NG) position limit if the participant agrees not to hold a position in the NG contract in the last three days. In the Commission's proposed rulemaking on position limits, the Commission codified the "Conditional Limit." As the Commission stated in the rulemaking: "[t]he proposed limit maximizes the objectives, enumerated in section 4a(a)(3) of the Act, of deterring manipulation and excessive speculation while ensuring market liquidity and efficient price discovery by establishing a higher limit for cash-settled contracts as long as such positions are decoupled from large physical commodity holdings and the positions in physical delivery contracts which set or affect the value of cash-settled positions."

Reasons for a Conditional Limit:

- The Commission has already recognized the need for and benefits of the Conditional Limit. The position limit rule now pending before the Commission reaffirms this policy and recognition that many market participants have a need to pay or receive the final settlement price of the NG contract to perfect their hedges and that this is most effectively accomplished by holding cleared or bilateral swaps to expiration. Removing or reducing the Conditional Limit would disrupt present market practice for the sole purpose of enhancing CME's competitive position. CME already accounts for 97% of all U.S. futures market volumes and 70% of all natural gas derivative volumes.

- Eliminating or decreasing the Conditional Limit for cash-settled contracts would be a significant departure from current rules, which have the support of the broader market. In the 17 months since the Conditional Limit provision went into effect, natural gas prices have been lower and less volatile than historical levels. ICE has received no complaints regarding natural gas markets during that timeframe nor are we aware of any complaints received by NYMEX or the CFTC. **The only party advocating for a change in the well-functioning status quo is CME**, who is clearly biased regarding the issue and whose own analysis supporting the change is significantly flawed (as explained in detail below).

- The proposed rule itself will already effectively halve the present Conditional Limit by converting it to an aggregate limit across designated contract markets, swap execution facilities, and the bilateral OTC market. Further constraining this limit as requested by CME would reduce even further the ability of hedgers to cost-effectively take swaps to final settlement as necessary to perfect their hedges.

CME's Analysis Is Flawed and Inconsistent

CME's analysis contains errors, selectively uses and discards data, confuses correlation and causation, relies on misleading metrics to make a point, and even highlights facts that contradict its own conclusions.[1] As an example, the CME states that:

[1] Note that this report is the CME's second attempt at this analysis after CFTC staff pointed out issues with the first version.

"The Commission's proposal permits a speculator to own positions in cash-settled contracts equivalent to 125% of the physical deliverable supply while simultaneously owning 25% of the physical deliverable supply."

This statement is misleading. The very "condition" in Conditional Limit means that participants cannot own a position in the physically delivered futures contract. A participant in the broader physical natural gas markets would be considered a commercial firm potentially eligible for a hedge exemption and would have no need of a Conditional Limit.

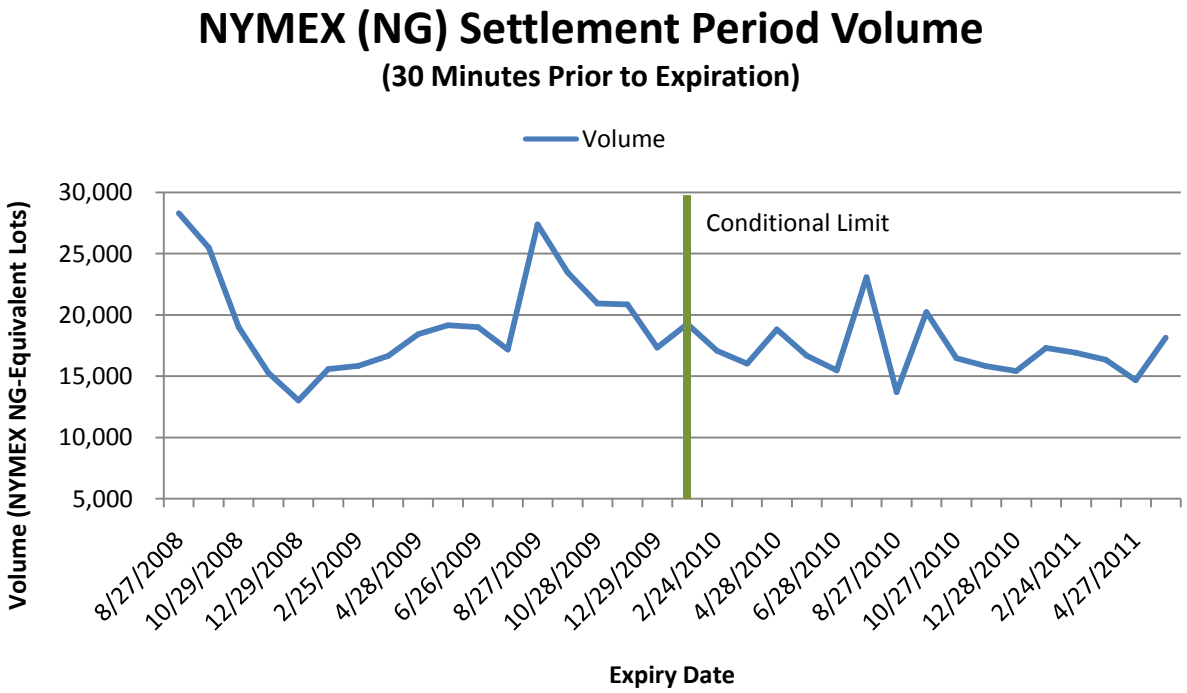
The following will explore each of CME's claims in more detail.

Volume:

CME claims that:

"…volume in the NYMEX physically-delivered Natural Gas contract during the settlement period on the last trading day declined by 16%." [from 8,242 down to 6,919]

To reach this conclusion, CME averaged volume for the 17 expiries since the Conditional Limit went into effect and arbitrarily compared it to the average of the 7 expiries prior to that. Using publicly available Bloomberg data[2] and expanding the analysis to an equal number of expiries before and after, ICE created the chart below:

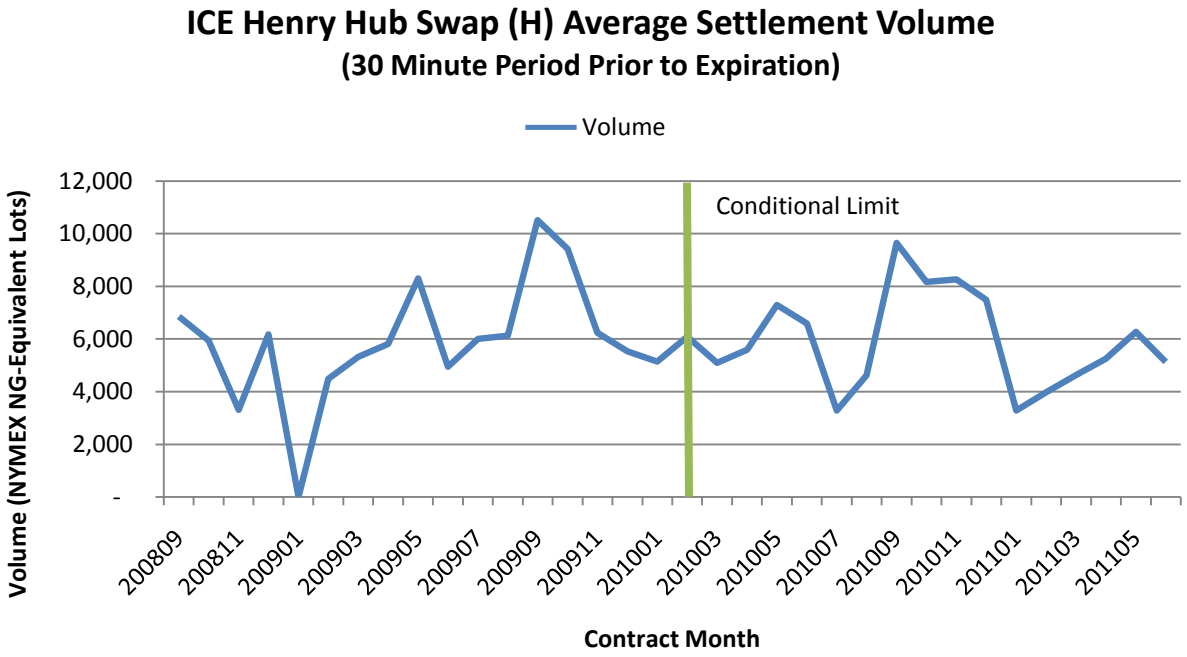


Source: Bloomberg

This graphical view, not provided by the CME, reveals the historical variation in settlement period volumes and a generally flat to slightly downward trend – hardly statistically significant. Regardless, CME's contention is that *any* decrease in volume was caused by the Conditional Limit, with the implication being that volume migrated to the ICE Henry Hub swap. Firstly, hundreds of factors, including supply/demand fundamentals, regulatory uncertainty, and macro-economic events, drive volume levels over time.

[2] Volume presented in CME's analysis for the last 30 minutes on expiry day is inexplicably *much lower* than publicly available volumes obtained from Bloomberg.

Secondly, ICE examined its own Henry Hub swap volumes during the settlement period for the same expiries and found the following:



Source: Bloomberg

As reflected above, ICE volumes were also historically variable and trending slightly downward during the same time period. This data refutes any suggestion that the existence of the Conditional Limit resulted in increased volume in the ICE Henry Hub Swap at the expense of volume in the NYMEX NG contract during the settlement period. Rather, the obvious conclusion is simply that settlement period volumes across all markets drifted slightly downward during this period.

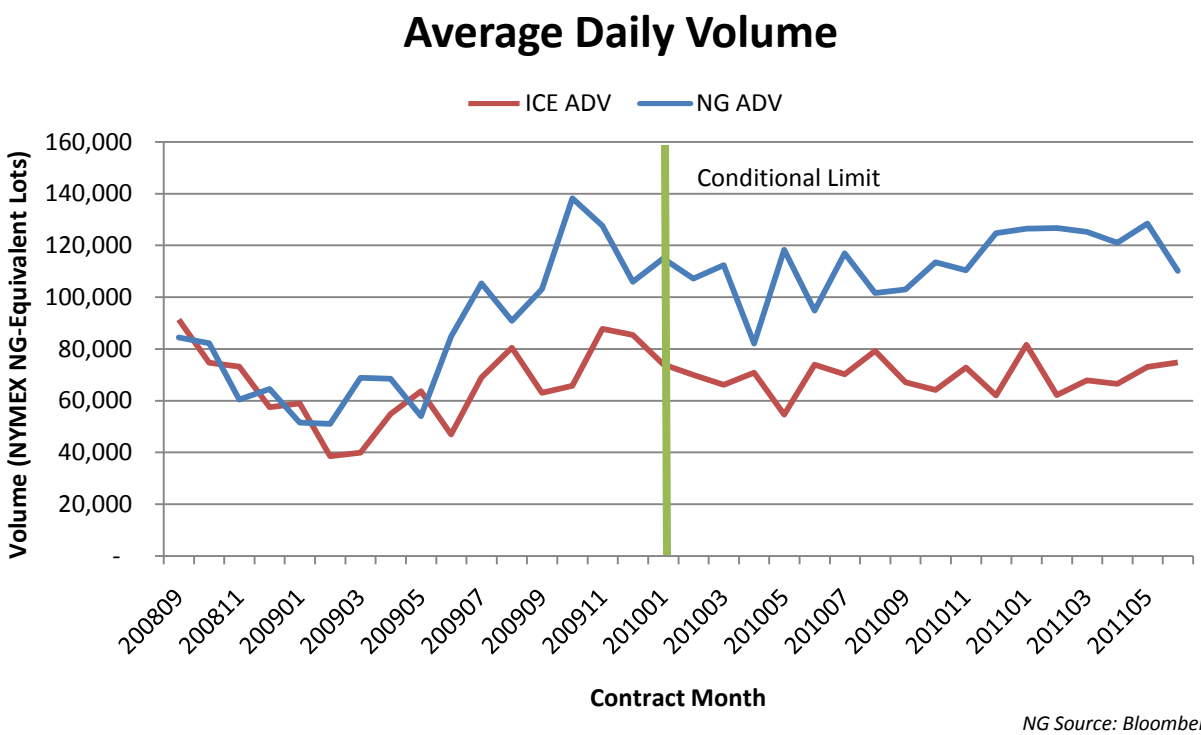
Perhaps most damaging to CME's claim is its own evidence that settlement period volumes for the NYMEX NG contract actually increased on the day *prior* to expiration. Since the Conditional Limit requires that a trader have no position in the NG contract during the last 3 days of trading, any claim that the Conditional Limit adversely impacted NG volumes should be consistently supported by some evidence of lower volume on all 3 days. Rather, CME's own analysis shows that settlement period volume *increased* on the next to last day by a larger percentage than CME claims volume decreased on the last day.

CME goes on to claim that:

> *"…average total daily volume has decreased from 56,026 to 54,625* [-2.5%] *on average since the Conditional Limit became effective."*

Ignoring the likely statistical insignificance of the claimed 2.5% decline, ICE compared publically available Average Daily Volumes ("ADV") for the NG contract with those of the ICE Henry Hub Swap[3]. Similar to the previous ICE chart for settlement period volumes, ICE expanded the timeframe to 17 expiries both before and after implementation of the Conditional Limit:

[3] Volume presented in CME's analysis for the daily average, like volume for the last 30 minutes on expiry day, is inexplicably *much lower* than publicly available volumes obtained from Bloomberg.



NG Source: Bloomberg

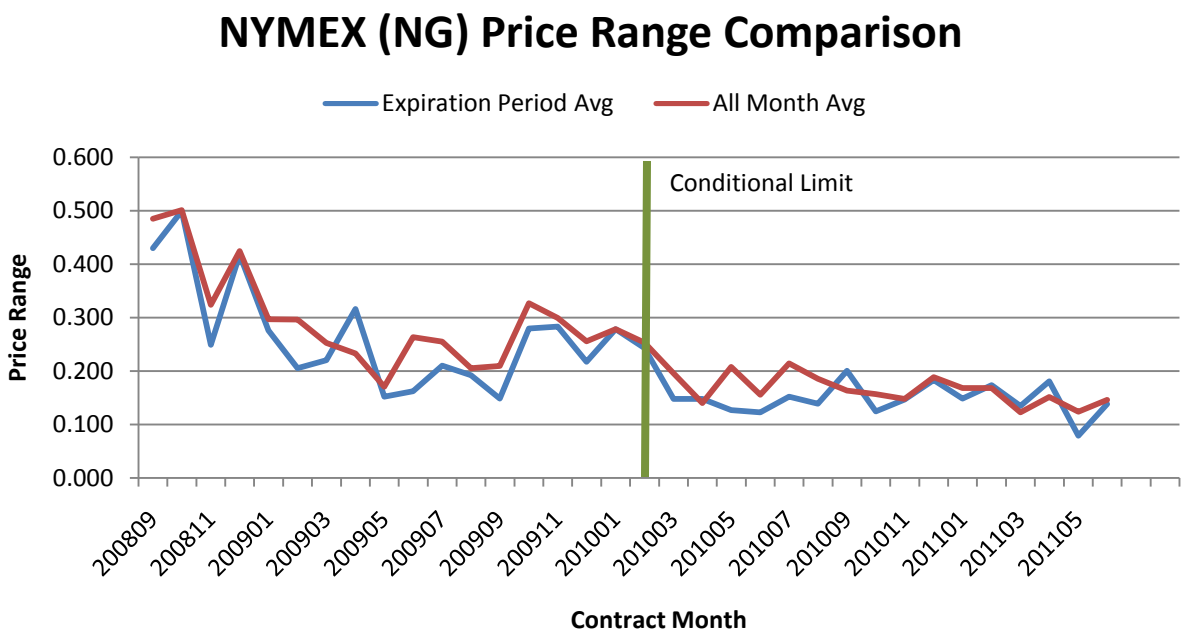
Contrary to CME's claim, the average NG ADV was 85,693 before and 113,180 after implementation of the Conditional Limit – *a significant increase of more than 32%, not a 2.5% decrease*. Furthermore, over the same period average ADV for the ICE Henry Hub Swap grew from 66,187 before to 69,242 after -- an increase of only 4.6%. In summary, not only did volume in the NYMEX NG contract increase, it grew at a faster rate than that of the ICE Henry Hub Swap. As stated previously, there are hundreds of factors influencing the absolute volume levels of both contracts over this period, but there is no indication in any of this volume data that the Conditional Limit had any adverse impact on NYMEX NG volumes.

Prices

CME claims that:

> *"…it appears that there has been less price fluctuation in Natural Gas during the settlement period since the conditional limit was instituted."*

First, a tighter trading range is generally a by-product of lower volatility, and volatility, like volume, is influenced over time by hundreds of factors, including supply/demand fundamentals, regulatory uncertainty, and macro-economic events. Second, in an era during which regulators have sought to define, identify, and mitigate causes of excessive volatility, a narrowing trend in the trading range should be welcome news. Regardless, as the chart below indicates, the Conditional Limit cannot take credit for the improving trend since the trend began long before and seems generally unaffected by implementation of the Conditional Limit:



Source: Bloomberg

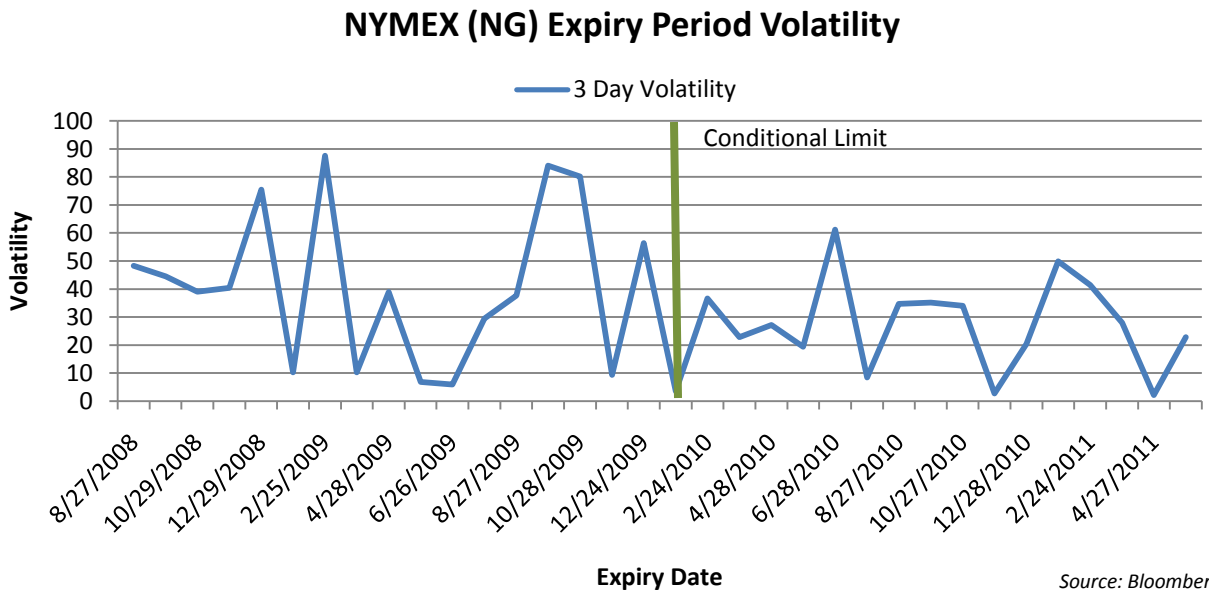
CME's paper analyzes trading range trends using a number of other methodologies and timeframes, but reaches this same conclusion in all cases: price ranges were narrowing over the entire period.

Volatility

Despite the narrowing of price ranges during both daily and settlement periods, CME nonetheless claims that:

> *"…relative volatility in the NYMEX physically-delivered Natural Gas contract during the settlement period increased by approximately 25%."*

To determine how NYMEX reached this conclusion, we started with the simplest, most direct analysis of volatility spanning the same "before" and "after" period:



Source: Bloomberg

From this chart[4], ICE concluded that volatility during the period was generally trending down both before and after implementation of the Conditional Limit with no noticeable impact from implementation of the Conditional Limit. Again, lower volatility is usually preferred by regulators, hedgers, and consumers so this trend, in and of itself, should be welcome news.

Since this trend did not support CME's position, they invented the "Relative Closing Range" ("RCR") metric which they defined to be the ratio of the closing range on expiration to the standard deviation ("STD") of the last 20 days' (including expiration) settlement prices. CME states that the RCR increased approximately 25% between the "before" and "after" timeframes they selected, but without having access to their data we have no way of investigating that conclusion, let alone re-evaluating it under a more objective (e.g., 17 expiries before and after) timeframe. We can, however, make a number of critical observations about the RCR methodology generally:

- RCR is a ratio. The chart above indicates that volatility was trending down over the entire period. It is possible that the closing range on expiration was simply going down at a lower rate than the rate at which the 20-day STD of settlement prices was going down. Small differences in these rates over time could easily generate a 25% increase *in the ratio*. Observers could mistakenly conclude that volatility was rising when in reality both long and short term volatility may have been decreasing, but at different rates. All three of CME's alternative approaches to calculating RCR would rely on this phenomenon.

- Particularly troubling is CME's admission that:

  > *"Note: there was one termination after the implementation that had a much higher RCR than the others (September 2010 contract termination during August 2010). (However, we have kept this data point in our analysis because we believe such an "outlier" is illustrative of our concern with this policy – it makes the market more susceptible to volatility. Also, dropping the "high" from the before data preserves the magnitude of the before-after relationship.)"*

  First, CME notes that there is an outlier in the "after" data that is presumably significantly skewing results in support of their conclusion. Any number of factors could be contributing to the outlier in August 2010 including supply/demand fundamentals and macro-economic events. We have not attempted to analyze conditions in the natural gas and broader commodity and financial markets on that date, but do note that the expiration in question occurred on a Thursday – the day of the week that the Energy Information Administration releases its natural gas storage report. Trading on Thursdays can be especially volatile as a result. Second, in the quoted passage above, the CME makes reference to '…dropping the "high" from the before data…' which implies that they did omit another outlier that would have skewed results against their conclusion.

- Since the Conditional Limit requires a trader to have no position in the physically-delivered futures contract in the last three days of trading, any RCR metric may more appropriately use volatility over the last 3 days, rather than the closing range at expiration. This is simply a suggestion for improving the relevance of the RCR metric and not an endorsement of the metric itself.

Convergence

A fundamental requirement for a properly-functioning futures contract is that its price at expiration converges with the underlying physical market. Lack of convergence in certain agriculture futures from time to time has dramatically lowered the usefulness of those contracts. CME did not include a before and after convergence analysis in its Conditional Limit paper, so ICE conducted one. Not only were no

[4] ICE cannot readily obtain the data necessary to calculate settlement period volatility for NYMEX markets so we substituted the last three day volatility. Since the Conditional Limit is in effect for all three days, any impact on volatility should be present in both the last three day as well as the settlement period timeframes.

convergence problems noted, but the correlation between the futures expiration price and physical natural gas market prices increased from .8639 just prior to implementation of the Conditional Limit to .9041 at expiration of the June 2011 contract – an improvement of 4.65%. While ICE is not claiming that the Conditional Limit improved convergence, we are simply noting that the Conditional Limit did not adversely impact convergence.

Conclusion

CME's request that the Conditional Limit be decreased or eliminated is a change in the status quo that is not supported by the broader marketplace. Furthermore, CME's analysis is materially flawed and the underlying data does not support this requested change.

For the reasons noted above, the Commission should adopt final rules maintaining the status quo and maintaining the Conditional Limit at its current level.

I. Conditional Spot-Month Speculative Limit Proposal

Spot-month limits are largely common ground. They are based on tested self-regulatory judgments of exchanges that spot-month limits help to avoid congestion, avoid the circumstances that might invite an attempt to manipulate, and promote convergence of futures and cash markets. Conditional limits for the spot-month must be assessed in the context of the impact on those legitimate goals of the incentive that conditional limits create for traders to exit the physically delivered market in favor of cash settled contracts. The issue is whether conditional limits as have been proposed (or even as exist today) have furthered these legitimate goals. The data we discuss below shows that regulation that induces traders to exit the physically delivered futures market in favor of an identical cash settled contract should be abandoned to avoid decoupling the physical delivery spot market from the forces of price discovery by reducing market volume and increasing price volatility in the most sensitive trading moments in the delivery month. Our data show that, since conditional limits favoring financial markets were implemented, volume in the NYMEX physically-delivered Natural Gas contract during the settlement period on the last trading day declined by 16% and relative volatility increased by approximately 25%.

- **The Conditional Limit is inconsistent with the Commission's stated purpose.**
    - The Commission's stated objective for permitting conditional limits is: "The proposed limit maximizes the objectives, enumerated in section 4a(a)(3) of the Act, of deterring manipulation and excessive speculation while ensuring market liquidity and efficient price discovery by establishing a higher limit for cash-settled contracts as long as such positions are decoupled from large physical commodity holdings and the positions in physical delivery contracts which set or affect the value of cash-settled positions."
    - This bald assertion is unsupported by any empirical evidence or economic analysis.. The analysis provided below forcefully contradicts the rational for conditional limits relied upon in the NPR.
    - There is no logical basis for a Commission regulation that rewards traders for exiting the primary futures market by granting them permission to hold five times the spot limit if they only trade in a different market for the underlying commodity where delivery does not occur..
    - *It is CME Group's position that equivalent spot-month limits for physically-settled and economically equivalent cash-settled contracts, without any conditional component, is the most appropriate and effective means for preserving market integrity and achieving the Commission's stated objectives*.
- **The Commission provides no justification for giving traders in the cash settled contract five times the limit of traders who hold physically delivered futures.**
    - The Commission has never explained the 5x multiplier. Absent a rational, documented basis, it would be viewed as arbitrary and capricious.
    - The Commission's previous analysis demonstrates that physically-delivered contracts and their linked, cash-settled look-a-like contracts each have been found to serve a price-leading function.[5] The Commission observed that the "prices on the ICE and

[5] *See* Jeffrey H. Harris, Commodity Futures Trading Commission, Chief Economist, Testimony at Hearing to Examine Trading on Regulated Exchanges and Exempt Commercial Markets (Sept. 18, 2007), comparing the price discovery function of the NYMEX physically-delivered Natural Gas futures contract to that of the ICE cash-settled Natural Gas contract.

NYMEX contracts have an *ongoing, linked relationship* that extends not only to the linked settlement price but to prices between the two contracts throughout the trading day."[6] This interdependence means that establishing or liquidating a large position in the cash-settled contract may impact price formation in the physical-delivery contract and allowing much larger speculative positions in the cash-settled contract during the spot-month, while correspondingly draining liquidity from the physical contract, clearly increases the potential magnitude of the impact on the physical-delivery contract.

- **The CFTC's proposed conditional limit is inconsistent with its claim that tight limits in the spot month are effective in deterring or preventing market manipulation, corners and squeezes**.
    - The Commission's proposal permits a speculator to own positions in cash-settled contracts equivalent to 125% of the physical deliverable supply while simultaneously owning 25% of the physical deliverable supply.
    - If the Commission's conclusions respecting the role of position limits were correct; this concession to speculators must be seen as increasing rather than mitigating the risk of potential distortions by increasing the incentive to manipulate the less transparent physical market in order to benefit an outsized position in the cash-settled contract.
    - The Commission does not offer any explanation as to how this decision is consistent with its previous claims, why it is sound regulatory policy or consistent with its statutory objectives.
- **Conditioning the increased speculative position limit on non-participation in the physically settled futures contract is detrimental to the physically delivered contract**.
    - Large speculators are rewarded for exiting physically delivered contracts. This reduces liquidity and exacerbates volatility in the primary price discovery contract to the detriment of participants using the physical-delivery contract for hedging purposes.
    - Additionally, undermining liquidity in the referenced physical-delivery contract simply makes the primary price discovery contract more susceptible to manipulation and sudden price movements during the expiration period.
    - CME Group research indicates that since the current conditional limit was implemented in the natural gas market with the February 2010 expiration, volume in the NYMEX physically-delivered Natural Gas contract during the settlement period on the last trading day declined by 16% and relative volatility increased by approximately 25%.

II: Volume and Price Analysis from Market Regulation

The table below shows the average volume before the conditional limit was initiated and after it had become effective. CME Group Market Regulation used the seven expirations before the Conditional Limit became effective for the February 2010 expiration, as well as the 17 expirations with the conditional limit effective.

Volume

Analysis shows that the Average Volume on the Last Trade Day for each contract during the 30 minute settlement period has decreased from an average of 8,242 to 6,919. This is a decrease of 1,323 contracts traded and approximately a -16.1% change.

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[6] *See October 2007 "Report on the Oversight of Trading on Regulated Futures Exchanges and Exempt Commercial Markets* Order Finding That the ICE Henry Financial LD1 Fixed Price Contract Traded on the Intercontinental Exchange, Inc., Performs a Significant Price Discovery Function, 74 Fed. Reg. 37988, 37989-90 (July 30, 2009).

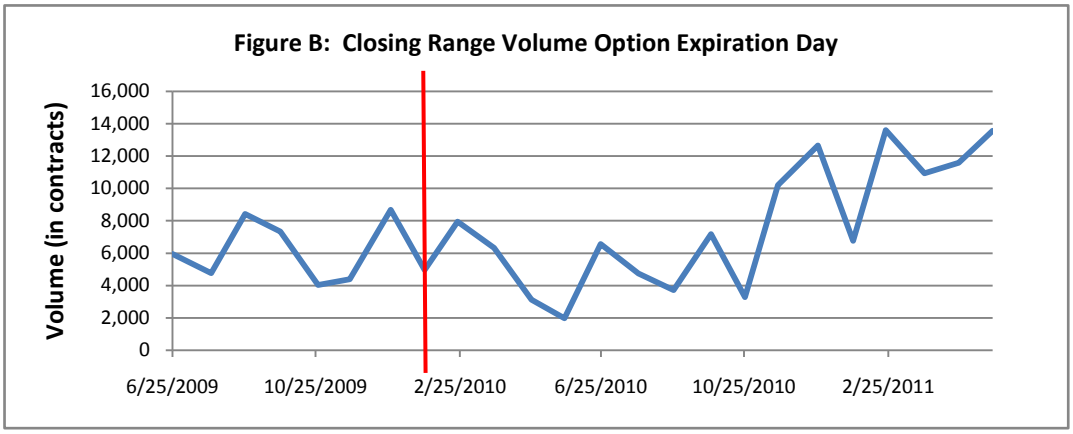
Average volume on the day before expiration, which is the options expiration day, has increased by 1,128 contracts since the conditional limits were put in place. Note that the volume traded during the closing range on options expiration day has also grown significantly during the most recent four expirations as shown in Figure B.

Additionally, analysis shows that the average total daily volume has decreased from 56,026 to 54,625 on average since the Conditional Limit became effective. This represents a decrease of 1,401 contracts traded, around a 2.5% change.

Figure A: Volume Analysis for Natural Gas (July 2009 – June 2011)

	Volume Analysis	Before Conditional Limit	After Conditional Limit	Change Since Instituting Conditional Limits	Percentage Change
A	Average Volume on Last Trade Day (LTD) Closing Range	8,242	6,919	-1,323	-16.1%
B	Average Volume on Option Expiration Day Closing Range	6,468	7,597	1,128	17.4%
C	Average Total Daily Volume	56,026	54,625	-1,401	-2.5%

Figure B: Closing Range Volume Option Expiration Day



**Red Line*: Conditional Limit Start Date*

Prices

In analyzing the price range throughout the day and within the settlement period, it appears that there has been less price fluctuation in Natural Gas during the settlement period since the conditional limit was instituted. The "Average Range in Settlement Period" represents the difference between the high and the low of the settlement period as shown in Figure C below in line D. On average there was a $0.038 narrower range since the Conditional Limit was initiated. Line F titled "Average % Price Range Settlement Period" shows the price change in relation to the Settlement Range High Price. According to data analyzed, it appears there is less price fluctuation in relation to the settlement range since the Conditional Limit was initiated.

For the entire daily price fluctuation, the average price range during the time before conditional limits was lower. Line G in Figure C below shows the price range as a percentage of the daily high price. It is apparent that the price of Natural Gas, on average, had a wider range in respect to the daily high price before conditional limits.

Figure C: Price Analysis for Natural Gas (July 2009 – June 2011)					
	Price Analysis	**Before Conditional Limits**	**After Conditional Limits**	**Since Instituting Conditional Limits**	**% Change**
D	Average Range in Settlement Period	$0.108	$0.070	$-0.038	-35.1%
E	Average Range in Price (Daily)	0.183	0.154	-0.029	-15.9%
F	Average as % Price Range Settlement Period	2.37%	1.60%	-0.77%	
G	Average as % Price Range	5.56%	3.54%	-2.03%	
H	Average Range in Settlement Period Last Trade Date	0.157	0.095	-0.062	-39.6%
I	Average as % Price Range on Last Trade Date	3.75%	2.20%	-1.55%	
J	Average Range Settlement Period Option Expiration Day	0.078	0.064	-0.014	-18.1%
K	Average as % Price Range on Option Expiration Day	1.51%	1.42%	-0.09%	

Table Explanation:

- Rows D, E, H, and J all represent the average difference in the price range in the same terms Natural Gas futures are priced, $.001 per MMBtu, where 0.108 would be 10 and 8/10 cents.
- Rows F, G, I, and K are the closing ranges divided by the closing range high, which represents the percentage the range for the settlement period in relation to closing range's high price. The formula used to determine these percentages is:

$$\frac{\text{(Closing Range High Price - Closing Range Low Price)}}{\text{Closing Range High}}$$

III. Volatility Analysis from CME Group Research and Product Development (RPD)

Based on data provided by Market Regulation, the RPD, further examined whether there has been a measurable change in the volatility in NYMEX's physically delivered natural gas futures contract since the introduction of conditional limits.

Key Takeaway:
The results of running multiple tests are consistent that when taking into account market volatility, the closing range in NG increased by a significant amount after the introduction of conditional limits. We used three different measures of volatility and the average increase in volatility was 25% after the introduction of conditional limits (range was from 21.8% to 27.6%).

Methodology:

- We evaluated the closing range for each termination day based on data from Market Regulation
- We evaluated the 20-day standard deviation of settlement prices ("20-day STD") for each day, including termination days, for the expiring natural gas contract. This is a standard measure of realized market volatility. Our measure of standard deviation was in terms of the natural logarithm of price changes, a measure of percentage change in price. Alternatively, we also completed the same analysis for outright price changes and there was no major change in any results.
- We compared the ratio of the closing range to the 20-day STD for the 17 expirations prior to the implementation of conditional limits to the 17 expirations subsequent to the implementation. This ratio expresses the closing range relative to current market volatility; thus, it takes into

account current market conditions. Thereafter, we refer to this ratio as the Relative Closing Range (RCR).

Summary of Results:

1. The most direct comparison is the average of the termination day RCRs before and after the implementation of conditional limits. The before-RCR was .0454 and after-RCR was .0580, an increase of 27.6%. Note: there was one termination after the implementation that had a much higher RCR than the others (September 2010 contract termination during August 2010). (However, we have kept this data point in our analysis because we believe such an "outlier" is illustrative of our concern with this policy—it makes the market more susceptible to volatility. Also, dropping the "high" from the before data preserves the magnitude of the before-after relationship.)
2. In the second test, we modified the analysis to eliminate any potential "feedback" effect that could partially distort the results. To eliminate this bias, we used the 20-STDs for the day immediately prior to the advent of the conditional limit period; in other words the 4th Business Day before the end of the month. This analysis using those 20-day STDs resulted in a before-RCR of .0444 and an after-RCR of .0541, an increase of 21.8%.

We also modified the RCR applying implied volatility (expressed in terms of dollars) instead of the STD. This, of course, substitutes a measure of market expectations for realized volatility. The results for this were that the before-RCR was .0378 and after-RCR was .0472, an increase of 25.1%. Once again, the results are consistent and under all three tests, the Relative Closing Range was more volatile after the conditional limits were introduced.